

[0108] 36 reference auxiliary line creation unit (auxiliary line creation unit)

[0109] 37 adjacent auxiliary line creation unit (auxiliary line creation unit)

[0110] 38 auxiliary line selection unit

[0111] 39 selection processing unit

[0112] 46 wireless communication terminal

1. An autonomous travel system comprising:

a farm field acquisition unit that obtains information of a farm field including a work area, in which a travel path for a work vehicle on which a work machine is mounted to autonomously travel to perform work is set, and a headland area, which is formed between the work area and a farm field peripheral edge;

a reference auxiliary line creation unit that creates a first reference auxiliary line in the headland area at a position that is distant inward from the farm field peripheral edge by a first reference interval, which is $\frac{1}{2}$ of a work width or $\frac{1}{2}$ of a work machine width;

an adjacent auxiliary line creation unit that creates a first adjacent auxiliary line at a position that is distant inward from the first reference auxiliary line by an auxiliary line interval, which is a value obtained by subtracting an overlap amount from the work width or a value obtained by adding a work interval to the work width, wherein a total number of the first reference auxiliary line and first adjacent auxiliary lines to be created inside of a predetermined side of the farm field peripheral edge is a value obtained by rounding up decimal places of L/S if a headland width, which is a distance from the farm field peripheral edge to the work area, is L and the auxiliary line interval is S ; and

a travel control unit that causes the work vehicle to autonomously travel along at least a part of the first reference auxiliary line and first adjacent auxiliary lines.

2. An autonomous travel system comprising:

a farm field acquisition unit that obtains information of a farm field including a work area, in which a travel path for a work vehicle on which a work machine is mounted to autonomously travel to perform work is set, and a headland area, which is formed between the work area and a farm field peripheral edge;

a reference auxiliary line creation unit that creates a second reference auxiliary line in the headland area at a position that is distant outward from a work area peripheral edge by a second reference interval, which is a value obtained by subtracting an overlap amount from $\frac{1}{2}$ of a work width or a value obtained by adding a work interval to $\frac{1}{2}$ of the work width;

an adjacent auxiliary line creation unit that creates a second adjacent auxiliary line at a position that is distant outward from the second reference auxiliary line by an auxiliary line interval, which is a value obtained by subtracting the overlap amount from the work width or a value obtained by adding the work interval to the work width, wherein a total number of the second reference auxiliary line and second adjacent auxiliary lines to be created outside of a predetermined side of the work area peripheral edge is a value obtained by rounding down decimal places of L/S or a value obtained by subtracting 1 from the value obtained by rounding down decimal places of L/S if a headland

width, which is a distance from the farm field peripheral edge to the work area, is L and the auxiliary line interval is S ; and

a travel control unit that causes the work vehicle to autonomously travel along at least a part of the second reference auxiliary line and second adjacent auxiliary lines.

31. The autonomous travel system according to claim 1, wherein the reference auxiliary line creation unit is capable of creating the first reference auxiliary line and is capable of creating a second reference auxiliary line in the headland area at a position that is distant outward from a work area peripheral edge by a second reference interval, which is a value obtained by subtracting an overlap amount from $\frac{1}{2}$ of the work width or a value obtained by adding a work interval to $\frac{1}{2}$ of the work width, and

wherein the adjacent auxiliary line creation unit is capable of creating the first adjacent auxiliary line and is capable of creating a second adjacent auxiliary line at a position that is distant outward from the second reference auxiliary line by an auxiliary line interval, and a total number of the second reference auxiliary line and second adjacent auxiliary lines to be created outside of a predetermined side of the work area peripheral edge is a value obtained by rounding down decimal places of L/S or a value obtained by subtracting 1 from the value obtained by rounding down decimal places of L/S ;

wherein the autonomous travel system further comprises an auxiliary line selection unit that selects the first reference auxiliary line and first adjacent auxiliary lines or to select the second reference auxiliary line and second adjacent auxiliary lines; and

wherein the travel control unit causes the work vehicle to autonomously travel along at least a part of the auxiliary lines selected by the auxiliary line selection unit.

4. The autonomous travel system according to claim 2, wherein, in a case where an interval between the second adjacent auxiliary line and the farm field peripheral edge is narrower than $\frac{1}{2}$ of the work width or $\frac{1}{2}$ of the work machine width, the adjacent auxiliary line creation unit does not create the second adjacent auxiliary line or deletes the second adjacent auxiliary line after creation.

5. The autonomous travel system according to claim 1, wherein the autonomous travel system comprises a selection processing unit that performs a process of allowing a user to select in which of the work area and the headland area the work is to be performed and a process of allowing the user to select whether the work in the headland area is to be performed or the work is to be ended, and

wherein, in a case where it is determined that the user has selected the work in the headland area, the travel control unit causes the work vehicle to autonomously travel along at least a part of the auxiliary lines created by the reference auxiliary line creation unit and the adjacent auxiliary line creation unit.

6. An autonomous travel system comprising:

a farm field acquisition unit that obtains information of a farm field including a work area, in which a travel path for a work vehicle on which a work machine is mounted to autonomously travel to perform work is set,